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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/848,933

05/19/2004

Michael Lewis

LLP127US

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EXAMINER

TRAN, KHANH C

ART UNIT

PAPER NUMBER

2611

NOTIFICATION DATE

DELIVERY MODE

04/18/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docketing@eschweilerlaw.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/848,933	<b>Applicant(s)</b> LEWIS, MICHAEL	
	<b>Examiner</b> KHANH C. TRAN	<b>Art Unit</b> 2611	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,10,11 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 3-9 and 12-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/15/2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The Amendment filed on 1/11/2008 has been entered. Claims 1-21 are pending in this Office action.

### ***Response to Arguments***

2. Applicant's arguments filed on 1/11/2008, regarding claim 10, have been fully considered but they are not persuasive. The claim 10 rejection is still maintained because the pending claim ***does not*** include the claimed subject matter “***gradually reducing***” as argued on page 9 in Applicant's remarks.

3. Applicant's arguments with respect to claims 1-2, 11 and 19-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claim 10 is rejected under 35 U.S.C. 102(a) as being anticipated by FIG. 6 of admitted Prior Art.

Regarding claim 10, in paragraph [0056] of the original disclosure, FIG. 6 illustrates a combined pilot- and data-based frequency and phase tracking system according to the prior art. In paragraph [0024], prior art further discloses that it is desirable to be able to use robust pilot-based tracking near the beginning of the transmission, but to switch over to less noisy, but slower data-based tracking for the remainder of the transmission, using a combined architecture such as that shown in FIG. 6. Further from FIG. 6 prior art, it should be evident that the pilot-based phase estimation block 24 controls the switch-over to data-based tracking system.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 11 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frank et al. U.S. Patent Application Publication No. 2004/0170227 A1.

Regarding claim 1, referring to FIG. 3 illustrates a frequency correction apparatus according to Frank et al. teachings.

In FIG. 3, for the purpose of art rejection, frequency correction 6 and FFT 8 corresponds to the first system 102 (FIG. 7) of the original disclosure. Channel estimation 4, subcarrier demodulation 10, mapping 12 and calculation of carrier phase

offset per sample 24 corresponds to the second system 104 (FIG. 7) of the original disclosure. Multiplication 14 means, phase discrimination 16 and filter  $F(z)$  correspond to the control system 106 (FIG. 7) of the original disclosure.

Frank et al. does not explicitly disclose a control system being operable to gradually switch from the first system to the second system as claimed.

However, in paragraph [0048], also referring to FIG. 3, output  $u[k]$  of the subcarrier demodulator 10 are remodulated by a means 12 to obtain the remodulated symbols  $A_m[k]$ . The means 12 perform the remodulation of the output  $u[k]$  by a mapping performed according to the HIPERLAN/2 standard. The remodulated symbols  $A_m[k]$  are multiplied by a means 14 with the above values of the channel estimation  $H_m[k]$  of each subcarrier to obtain a weighted symbol estimation  $B_m[k]$  on each subcarrier. Further in paragraph [0050], the phase discrimination between received signal samples  $R_m[k]$  and the weighted symbol estimation  $B_m[k]$  yields the phase estimation outputted by a means 16. The phase estimation is further computed by a filter  $F(z)$  and filter  $F(z)$  outputs  $\phi[k-1]$ .

In light of the foregoing discussion, because multiplication 14 means, phase discrimination 16 and filter  $F(z)$  gradually updates frequency correction, therefore, one of ordinary skill in the art at the time the invention was made would have recognized that the multiplication 14 means, phase discrimination 16 and filter  $F(z)$  gradually reduces the effect of the first system and the second system.

Regarding claim 2, claim is rejected on the same ground as for claim 1 because of similar scope. Furthermore, referring back to FIG. 3, in paragraph [0048], Frank et al. further discloses that the remodulated symbols  $A_m[k]$  are multiplied by a means 14 with the above values of the channel estimation  $H_m[k]$  of each subcarrier according to the following equation to obtain a weighted symbol estimation  $B_m[k]$  on each subcarrier.

Regarding claim 11, claim is rejected on the same ground as for claim 2 because of similar scope.

Regarding claim 19, claim is rejected on the same ground as for claim 1 because of similar scope.

Regarding claim 20, claim is rejected on the same ground as for claim 1 because of similar scope.

Regarding claim 21, claim is rejected on the same ground as for claim 1 because of similar scope.

***Allowable Subject Matter***

6. Claims 3-9 and 12-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHANH C. TRAN whose telephone number is (571)272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCT

***4/11/2008  
/KHANH C. TRAN/  
Primary Examiner, Art Unit 2611***